

“A SCIENTOMETRIC ANALYSIS IN THE FIELD OF PHYSICS IN INDIA, 2000-2014”

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ABSTRACT

A scientometrics study has been carried out in the field of physics in India to analyze scientific productivity in the field of physics from 2000-2014. The objectives of the study is to find out year wise growth of publications, institutional productivity. The methodology for the present study the data was collected by using Web of Science (WoS), particularly Science Citation Index, Social Science Citation Index and Arts & Humanities Citation Index for the duration 2000-2014. The results reveal that there is a steady growth of publications during the period with highest number of publications 7953 (10.915%) were published during 2014 followed by 7128 (9.782%) publications during 2013. Among top 5 highly productive Research Institutions / Organizations in India, Indian Institute of Technology top the list with 9923 (13.62%) publications followed by Bhabha Atom Research Centre with 4772 (6.55%) publications

KEYWORDS: Scientometrics, Web of Science (WOS)

INTRODUCTION

Scientometrics is the study of measuring and analyzing science research. In practice, scientometrics is often done using bibliometrics which is a measurement of the impact of (scientific) publications. Modern Scientometrics is mostly based on the work of Derek J. de Solla Price and Eugene Garfield. Physical sciences epitomize its uniqueness among the different disciplines in science. Physics embodies many branches of research pursuits such as applied Physics, Physics Nuclear and others. The progress of research in chemical sciences has been phenomenal leading to emergence of many sub-disciplines such as astrophysics, biophysics, chemical physics and others.

Objectives of the Study

The main objective of the present study is to perform a Scientometrics analysis of physics in India. The specific objectives of the study are to;

- Find out the year wise growth of publications;
- Study the institutional productivity in the field of physics

Methodology

At present there are two citations databases, viz. Web of Science (WoS) and SCOPUS, wherein a scientist or a researcher can rely on these databases for citations. For the present study the data was collected by using Web of Science (WoS), particularly Science Citation Index Expanded (SCI- expanded), Social Science Citation Index (SCCI) and Arts & Humanities Citation Index (A&HCI) for the duration 1999-2012. By using suitable search syntax, records pertaining to physics in the web of science category field were downloaded for the period 2000-2014. SU=physics AND CU=India was used as the search syntax.

RESULTS AND DISCUSSION

Growth of Publications in India

Table 1: Year Wise Growth of Publications in India and World

Sl No	Publication Year	India	
		Publications	% of 72866
1	2000	2604	3.574
2	2001	2729	3.745
3	2002	3048	4.183
4	2003	3184	4.370
5	2004	3613	4.958
6	2005	4010	5.503
7	2006	4405	6.045
8	2007	4761	6.534
9	2008	5372	7.372
10	2009	5564	7.636
11	2010	5969	8.192
12	2011	6203	8.513
13	2012	6323	8.678
14	2013	7128	9.782
15	2014	7953	10.915
Total		72866	100.00%

Table No 1 shows a total of 72,866 publications were published by the Indian authors during 2000-2014. The highest number of publications 7953 (10.915%) were published during 2014 followed by 7128 (9.782%) publications during 2013. The least number of publications that is 2604 (3.574%) were received during the year 2000. The study reveals that there is a steady growth of publications during the period.

Institutional Productivity

Table 2 depicts Institutional Productivity in India in the field of physics. Among top 5 highly productive Research Institutions / Organizations in India, Indian Institute of Technology top the list with 9923 (13.62%) publications followed by Bhabha Atom Research Centre with 4772 (6.55%) publications.

Sl.No	Institution/Organization	No of Publications	% of 72866
1	Indian Institute of Technology	9923	13.62%
2	Bhabha Atom Research Centre	4772	6.55%
3	Indian Institute of Science	4270	5.86%
4	Tata Institute of Fundamental Research	4078	5.60%
5	Saha Institute of Nuclear Physics	2733	3.75%

CONCLUSIONS

It is a common knowledge that the coverage of Indian science journals in SCI or SCOPUS is quite less as compared to journals indexed by Indian Science Abstract. Thus, SCI or SCOPUS does not reflect a complete picture of Indian Scientific output. In view of this, it becomes imperative to examine the Indian scientific output using a more comprehensive database such as the Indian Science Abstract.

REFERENCES

1. Abramo, G., D'angelo, C.A., &Solazzi, M. (2011). The relationship between scientists' research performance and the degree of internationalization of their research. *Scientometrics*, 34 (3), 259-285.
2. Hadagali, G.S. (2014). Publication output of universities of Karnataka state during 1999-2012. In B.D. Kumbar (Eds.), *Scientometric indicators to evaluate science and technology output of universities and premier institutions in India* (National seminar papers and proceedings held at Karnatak University, Dharwad, and December 27-28, 2013). Dharwad: Karnatak University pp. 121-140.
3. Garg, K.C., Dutt, B., & Suresh Kumar (2006). Scientometric profile of Indian Science as seen through Science Citation Index. *Annals of Library and Information Studies*, 53, 114-125.

